

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.(Currently Amended) A waveguide ~~(9, 18, 35, 38)~~ for use in illuminating a display panel ~~(2)~~, comprising:

a first face ~~(13)~~ arranged to receive light from a light source ~~(3)~~; and

an exit face ~~(15)~~ through which light may exit the waveguide; configured so that, in use, light enters the waveguide ~~(9, 18, 35, 38)~~ through said first face, is scattered by a plurality of portions of diffusing material ~~(10a to 10f, 19a to 19g)~~ located within the waveguide ~~(9, 18, 35, 38)~~ and leaves the waveguide ~~(9, 18, 35, 38)~~ through said exit face ~~(15)~~; thereby illuminating the display panel;

wherein at least one of said plurality of portions can be

switched between a state in which said portion is predominantly light-transmissive and a state in which said part is predominantly diffusive.

2. (Currently Amended) A-The waveguide ~~(9, 18, 35, 38)~~ according to claim 1, wherein the light leaving the waveguide ~~(9, 18, 35, 38)~~ through the exit face forms a pattern of light lines.

Claim 3 (Canceled)

4. (Currently Amended) A-The waveguide ~~(18, 35, 38)~~ according to ~~claim 3~~ claim 1, further comprising a plurality of electrodes ~~(22, 23, 24, 24a, 39)~~, wherein said at least one portion ~~(19a to 19g)~~ is configured to respond to the application of an electric field through said electrodes ~~(22, 23, 24, 24a, 39)~~ by switching from one of said light-transmissive state and said diffusive state to the other of said light-transmissive state and said diffusive state.

5. (Currently Amended) A-The waveguide according to claim 4, wherein light passing through a first region of the exit face ~~(15)~~ produces uniform illumination within a first area-~~(26)~~, while light passing through a second region of the exit face ~~(15)~~ produces a pattern of light lines within a second area-~~(27)~~.

6. (Currently Amended) A-The waveguide according to claim 5, wherein said plurality of electrodes comprises a set of column electrodes-~~(22, 23)~~.

7. (Currently Amended) A-The waveguide according to claim 6, wherein said plurality of electrodes further comprises a set of row electrodes-~~(24)~~.

8. (Currently Amended) A-The waveguide according to claim 5, wherein said plurality of electrodes comprises a two dimensional array of electrodes ~~(22a to 22c, 22p, 22q, 23a to 23d, 23p to 23s)~~.

9. (Currently Amended) A-The waveguide according to claim 8,

further comprising an active matrix ~~(32, 33, 34)~~.

10. (Currently Amended) ~~A The waveguide (35)~~ according to claim 1, comprising a reflective surface ~~(36)~~, wherein said reflective surface ~~(36)~~ is arranged to reflect light scattered by at least one portion ~~(10a to 10f, 19a to 19g)~~ in a direction leading away from the exit face ~~(15)~~.

11. (Currently Amended) A waveguide ~~(9, 18, 35, 38)~~ according to claim 1, for use in illuminating a display panel, comprising:
a first face arranged to receive light from a light source;
and
an exit face through which light may exit the waveguide;
configured so that, in use, light enters the waveguide through
said first face, is scattered by a plurality of portions of
diffusing material located within the waveguide and leaves the
waveguide through said exit face; thereby illuminating the display
panel;

wherein the diffusing material comprises a liquid crystal.

12. (Currently Amended) A The waveguide ~~(18, 35, 38)~~ according to claim 11, wherein the diffusing material is a liquid crystal gel.

13. (Currently Amended) A The display ~~(8, 17, 37)~~ comprising:
a display panel ~~(2)~~; and
an illumination system arranged to illuminate the display panel ~~(2)~~, comprising a light source ~~(3)~~ and a waveguide ~~(9, 18, 35, 38)~~ according to claim 1.

14. (Currently Amended) A display ~~(8, 17, 37)~~ comprising:
a display panel ~~(2)~~; and
an illumination system arranged to illuminate the display panel ~~(2)~~, comprising a light source ~~(3)~~ and a waveguide ~~(9, 18, 35, 38)~~ for illuminating the display panel;
wherein the waveguide comprises:
a first face ~~(13)~~ arranged to receive light from a light source ~~(3)~~; and

an exit face ~~(15)~~ through which light may exit the waveguide;
configured so that, in use, light enters the waveguide ~~(9, 18,~~
~~35, 38)~~ through said first face, is scattered by a plurality of
portions of diffusing material ~~(10a to 10f, 19a to 19g)~~ located
within the waveguide ~~(9, 18, 35, 38)~~ and leaves the waveguide ~~(9,~~
~~18, 35, 38)~~ through said exit face ~~(15)~~;

and wherein at least one of said portions ~~(19a to 19g)~~ can be
switched between a state in which said part is predominantly light-
transmissive and a state in which said part is predominantly
diffusive so that light leaving the exit face ~~(15)~~ forms a pattern
of light lines, comprising:

an arrangement ~~(40, 41)~~ for determining the position of a
viewer ~~(6)~~;

means ~~(25, 40)~~ for switching one or more of the portions ~~(19)~~
in order to vary the position of the light lines according to the
detected position of the viewer ~~(6)~~; and

means ~~(35, 37)~~ for adjusting an image displayed on the display
panel ~~(2)~~ according to the detected position of the viewer.

15. (Currently Amended) A communications device comprising a display ~~(8, 17, 37)~~ according to claim 13.

16. (Currently Amended) A computing device ~~(28)~~ comprising a display ~~(8, 17, 37)~~ according to claim 13.

17. (Currently Amended) ~~Audio/visual~~ An audio/visual equipment comprising a display ~~(8, 17, 37)~~ according to claim 13.

18. (Currently Amended) A method of presenting an image comprising the acts of:

displaying an image on a display panel ~~(2)~~; and

illuminating the display panel ~~(2)~~ using a light source ~~(3)~~ and a waveguide ~~(18, 35, 38)~~;

wherein said waveguide ~~(18, 35, 38)~~ comprises a layer ~~(19)~~ of diffusive material and the ~~step act~~ of illuminating backlighting comprises the act of setting the optical properties of at least one portion ~~(19a to 19g)~~ of the layer ~~(19)~~ of diffusive material; and

wherein the act of setting optical properties comprises

applying a potential difference across said at least one portion.

Claim 19 (Canceled)

20. (Currently Amended) A The method according to ~~claim 19~~
claim 18, wherein the step of setting optical properties comprises
switching at least one portion ~~(19a to 19g)~~ of the layer ~~(19)~~ of
diffusive material between a state in which said portion ~~(19a to~~
~~19g)~~ is predominantly light-transmissive and a state in which said
portion ~~(19a to 19g)~~ is predominantly diffusive.

21. (Currently Amended) A The method according to claim 18,
wherein the optical properties of said portions ~~(19a to 19g)~~ are
set so that said illuminating comprises a plurality of light lines
and said image is a 3D image ~~(31)~~.

22. (Currently Amended) A The method according to claim 18,
wherein the optical properties of said portions ~~(19a to 19g)~~ are
set so that uniform illumination is produced and said image is a 2D

image ~~(30)~~.

23. (Currently Amended) A ~~The~~ method according to claim 18, comprising switching said ~~regions (19a to 19g)~~ at least one portion between a first mode, in which a plurality of light lines is produced for illuminating a 3D image ~~(31)~~, and a second mode in which uniform illumination is produced for illuminating a 2D image ~~(30)~~.

24. (Currently Amended) A ~~The~~ method according to claim 21, wherein said illuminating illuminates a first area of the display panel ~~(2)~~ with uniform illumination and a second area of the display panel ~~(2)~~ with the plurality of light lines, the image being displayed on the display panel ~~(2)~~ comprising a 2D image ~~(30)~~ within said first area and a 3D image ~~(31)~~ within said second area.

25. (Currently Amended) A method of presenting an image comprising:

displaying an image on a display panel ~~(2)~~; and

providing backlighting for the display panel ~~(2)~~ using a light source ~~(3)~~ and a waveguide ~~(18, 35, 38)~~;

wherein said waveguide ~~(18, 35, 38)~~ comprises a layer ~~(19)~~ of diffusive material and the step of providing backlighting comprises setting the optical properties of at least one portion ~~(19a to 19g)~~ of the layer ~~(19)~~ of diffusive material; and wherein the optical properties of said portions ~~(19a to 19g)~~ at least one portion are set so that said backlighting comprises a plurality of light lines and said image is a 3D image ~~(31)~~; and,

determining a position of a viewer ~~(6)~~ and adjusting said pattern of light lines and said image ~~(31)~~ according to the determined viewer position.